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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

POON, HOA K

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/804,910	Applicant(s) KIRITA, HIROSHI	
	Examiner HOA POON	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/19/2004, 4/30/2007, 11/16/2007 and 2/5/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. **Claims (1-2), (8-9), and (15-16) are rejected under 35 U.S.C. 102(a) as being anticipated by Nagumo et al. (US 2002/0075372).**

Regarding claim 1 and 8:

An image forming device, comprising:

a plurality of holding units (Para. [0070], 5 line buffer) that holds data of pixels around a target pixel;

a weight generating unit (Para. [0024]) that generates a weight for each holding unit;

a plurality of weight applying units that applies a corresponding weight to the data held by each holding unit (Para. [0095], weighted sum); and

a control unit that determines an exposing energy for the target pixel in accordance with an output of each weight applying unit.(Para. [0080]).

Regarding claim 2 and 9:

The image forming device according to claim 1, wherein each weight applying unit is a multiplier that multiplies the data and the weight, and the control unit includes an adder that adds the output of each weight applying unit (Para. [0095]) and compares (Para. [0073]) an additional value of the adder with one or more reference to determine the exposing energy.

Regarding claim 15:

An image forming method comprising:
extracting data of pixels around a target pixel (Para. [0070], extracting circuit 125);
applying a weight to each extracted data adding the data applied with the weight (Para. [0095], weighted sum); and
determining an exposing energy for the target pixel in accordance with an additional value. (Para. [0080]);

Regarding claim 16:

The image forming method according to claim 15, further comprising:
designating a register (Para. [0077], five-line buffer, register is construed as memory);
writing the weight into the designated register (Fig. 11A-11H); and
retrieving the weight from the register (Para. [0079]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims (3-4) and (10-11) are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagumo et al. (US 2002/0075372) applied in claims 1 and 8 in view of Okano et al. (Patent Number: 4,887,224).

Regarding claim 3 and 10: Nagumo discloses a forming image device that adjusts the driving current supplied to form a high intensity pixel according to intensities of other pixels nearby. Nagumo does not explicitly disclose a holding unit for the group of pixels is a register as claimed in claim 3 and 10; However, Okano discloses:

The image forming device according to claim 1, wherein the weight generating unit is a register (Col. 8, line 25, FIFO register 71) that is provided for each holding unit.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to combine a system of Nagumo and Okano to implement a circuitry in an image forming device that includes a register as a memory element in order to hold image data for efficiency purpose.

Regarding claim 4: Nagumo discloses a forming image device that adjusts the driving current supplied to form a high intensity pixel according to intensities of other pixels nearby. Nagumo does not explicitly disclose a microprocessor or address decoder that decodes an address output from the microprocessor as claimed in claim 4. However, Okano discloses:

The image forming device according to claim 3, further comprising:
a microprocessor unit (Col. 8, line 22, CPU 62); and
an address decoder that decodes an address output (Col. 8, line 29, address decoder 84) from the microprocessor unit and designates each register, wherein the register designated by the address decoder stores weight data output by the microprocessor unit.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to combine a system of Nagumo and Okano to implement a circuitry in an image forming device that includes a processor, and address decoder for device selection purpose.

Regarding claim 11: Nagumo discloses:

The image forming device according to claim 10, further comprising:
means for outputting an address and a weight corresponding to the address (Para. [0078],);
means for selecting one of the means for holding a weight in accordance with the address (Para. [0079]); and

means for holding a weight corresponding to the address by the selected means for holding a weight. (Para. [0077])

5. Claims (5-7) (12-14), (17-18) and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagumo et al. (US 2002/0075372) applied in claims 1, 8, and 15 in view of Hara (Patent Number: 5,774,167).

Regarding claim 5 and 12: Nagumo discloses an image processing device that includes filter circuitry to detect and enhance image elements based on the pixel at the center of the detected area and its neighbor pixels. Nagumo does not explicitly disclose a laser scan unit as claimed in claim 5 and 12. However, Hara discloses:

The image forming device according to claim 1, further comprising a laser scan unit (Col. 9, line 64-66) that exposes the target pixel on a photoconductive body by the determined exposing energy.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Nagumo and Hara to provide an image forming and processing system that includes laser scan unit for speeding printing purpose.

Regarding claim 6, 13 and 17: Nagumo discloses an image processing device that includes filter circuitry to detect and enhance image elements based on the pixel at the center of the detected area and its neighbor pixels. Nagumo does not explicitly

disclose a duty ratio of a signal output by the laser scan unit as claimed in claim 6, 13 and 17. However, Hara discloses:

The image forming device according to claim 5, wherein a duty ratio of a signal output (Col. 9, line 42-44) from the control unit (Fig. 7, Printing control unit) controls the exposing energy of the laser scan unit.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Nagumo and Hara to provide an image forming and processing device to print image data according to a predetermined duty ratio for output consistency purpose.

Regarding claim 7, 14, 18 and 20: Nagumo discloses an image processing device that includes filter circuitry to detect and enhance image elements based on the pixel at the center of the detected area and its neighbor pixels. Nagumo does not explicitly disclose the control unit includes a signal generator that generates signals of different duty ratios and selects one of the signals output from the signal generator as claimed in claim 7, 14, 18 and 20. However, Hara discloses:

The image forming device according to claim 6, wherein the control unit includes a signal generator that generates signals of a plurality of different duty ratios (Col.9, TABLE 1), and in accordance with a determination result, selects one of the signals output from the signal generator. (Col. 9, line 51-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Nagumo and Hara to provide an image

forming and processing system that includes signal generator to generate signal to select output from the ratio table accordingly.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagumo et al. (US 2002/0075372) applied in claims 15 in view of Ernst (Patent Number: 6,356,291).

Regarding claim 19: Nagumo discloses an image processing device that includes filter circuitry to detect and enhance image elements based on the pixel at the center of the detected area and its neighbor pixels. Nagumo does not explicitly disclose an exposing energy corresponding to the additional value by referencing a lookup table. However, Ernst discloses:

The image forming method according to claim 15, further comprising determining an exposing energy corresponding to the additional value by referencing a lookup table (Col. 3, line 1-8).

therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine a system of Nagumo and Ernst to include a lookup table in referencing corresponding values for faster memory accessing purpose.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOA POON whose telephone number is (571)270-3758. The examiner can normally be reached on 8:30 am - 5:00 pm M-F EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoa Poon/
Examiner, Art Unit 2625

/Mark K Zimmerman/
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